

PATENT SPECIFICATION

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(54) REELS FOR FILAMENTARY MATERIAL

(71) We, BP CHEMICALS LIMITED of Britannic House, Moor Lane, London, E.C.2. and ENFIELD-STANDARD POWER CABLES LIMITED, of Millmarsh Lane, Enfield, Middlesex, both British Companies, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:—

The present invention is concerned with improvements in or relating to reels for filamentary material, and a method for their manufacture.

Filamentary material such as electric cable is currently packed on reels which consist of a metal core with cardboard side cheeks. The cable is normally wound onto a reel by mounting it on a suitable rotatable axis or winding head and feeding the cable onto the rotating reel.

An object of the present invention is to provide an improved reel for filamentary material.

According to the present invention a method for the manufacture of a reel for filamentary material comprises forming a transversely corrugated channel from a plastics material and bending it back upon itself to form the reel.

The transverse corrugations in the channel are set crosswise to its length and therefore allow it to bend and can be so arranged that the side walls of the reel are substantially flattened at their outer peripheries. By suitable design of the corrugations, particularly those in the side walls of the channel, the channel can be arranged to have a tendency to form itself into the shape of the reel. Such design can reduce the tensions in the final reel.

In a preferred embodiment the corrugations in the initially formed channel are such that corrugations are present in the formed reel. Thus such a reel for filamentary

[Price 25p]

material comprises a continuous transversely corrugated channel made from plastics material.

The corrugations in the channel may be sufficient to cause the two ends of the corrugated channel to remain joined together once one end has been inserted within the other. However, the two ends can be joined together by, for example, an adhesive or, when the channel is made from a suitable thermoplastics material, by heat welding. A useful method of welding consists in making a hole or holes through the overlapped ends of the channel by means of a heated rod which effects spot welding around the hole. One such hole is preferably formed in the base of the overlapped channels and forms a means by which the filamentary material can be attached to the reel before being wound on it.

In many cases, for instance when the reels are to be used for electric cable and are to be loaded by mounting them on a rotatable winding head, there may be no need to fix the two ends of the channel permanently together. It is found that if the ends of the channel are brought together to form the reel as the cable is wound onto it, there is sufficient strength in the combination of the formed reel on its winding head and the initial turns of cable to allow the rest of the cable to be wound on the reel to give a stable pack.

The corrugated channel from which reels can be made can either be formed in sections of the desired length or can be formed continuously in longer lengths which can subsequently be cut to the desired size.

The plastics channel can readily be formed from thermoplastic material such as polyvinyl chloride, polyethylene and polystyrene, by extrusion either as such or in the form of a pipe which can then be split longitudinally to give two channels. Alternatively a flat strip of thermoplastic material may be ther-

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moformed into a channel section. Transverse corrugations can be applied to the channel at any stage in its manufacture by any suitable procedure. The means commonly employed to form transversely corrugated pipe from thermoplastic materials can readily be adapted to form the corrugated channel required for the manufacture of reels according to the present invention.

10 The drawings accompanying the provisional specification illustrate features of reels according to the present invention. Figure 1 is a perspective drawing of a reel formed according to the present invention. 15 Figure 2 is a detail of the corrugations in the reel shown in Figure 1 at the edge where sides and the base of the corrugated channel meet. Figures 3 and 4 are cross-sections of corrugated channels which can readily be 20 formed into reels according to the present invention.

In Figure 1 the overlapping ends of the channel meet at (1) to form the reel. From Figure 2 it will be seen that the valley folds, 25 e.g. (2) and (3), in the base become ridge folds (4) and (5) in the side wall of the reel. This design of transverse corrugation gives rise to particularly rigid reels.

Figure 3 illustrates a channel corrugated 30 on all sides, the corrugations (6) being continued transversely around the channel. The width of the corrugations and the design of the corners (7) and (8) of the channel being arranged to allow easy formation of a reel 35 according to the present invention.

Figure 4 shows a channel having a flat base (9) and tapered corrugations (10) which in the formed reel provide substantially flat 40 side walls for the reel.

The channels illustrated in Figure 3 and 4 can conveniently be formed from extruded

tube which is subsequently corrugated in the desired manner and then split longitudinally.

WHAT WE CLAIM IS:—

1. A method for the manufacture of a reel for filamentary material which comprises forming a transversely corrugated channel from a plastics material, bending it back upon itself to form a reel and joining 50 the ends of the channel together.

2. A method as claimed in claim 1 wherein the ends of the channel are welded together by making a hole or holes through the overlapped ends of the channel by means 55 of a heated rod which effects spot welding round the hole or holes.

3. A method as claimed in claim 2 wherein a hole is formed in the base of the overlapped channel to form a means by which 60 the filamentary material can be attached to the reel.

4. A reel for filamentary material when prepared by a method as claimed in any of the preceding claims 1 to 3. 65

5. A method of forming a reel having filamentary material wound thereon which comprises forming a transversely corrugated channel from a plastics material, bending it back upon itself to form a reel and winding 70 the filamentary material on to the reel so formed.

6. A reel having filamentary material wound thereon when prepared by a method as claimed in claim 5. 75

7. A reel for filamentary material substantially as herein described and shown in the drawings accompanying the provisional specification.

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1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of
the Original on a reduced scale.

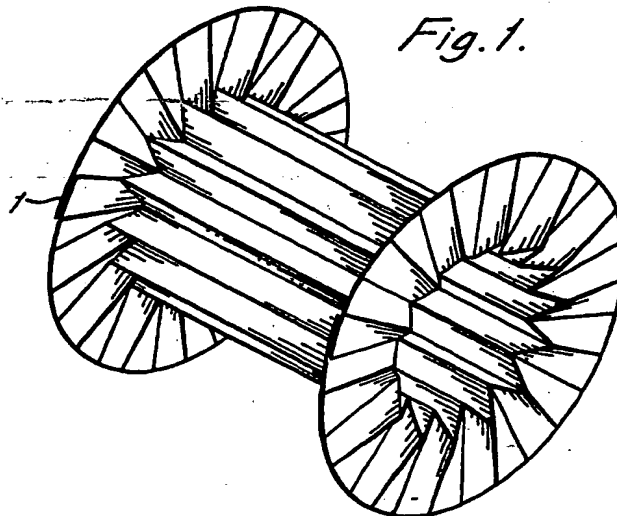


Fig. 3.

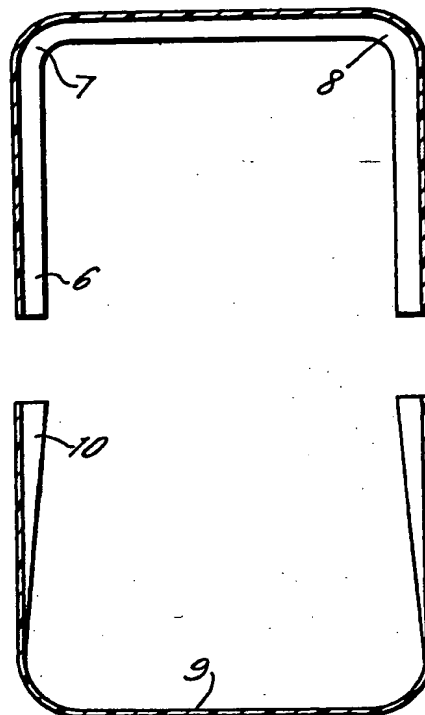


Fig. 2.

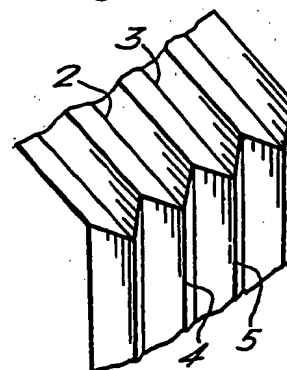


Fig. 4.

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